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Hawley's

Condensed Chemical

Dictionary

THIRTEENTH EDITION

Revised by

Richard J. Lewis, Sr.



JOHN WILEY & SONS, INC.

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PHENIRAMINE MALEATE

860

hol, ether, acetone, benzene; solutions in alkalis are red; in concentrated sulfuric acid blue.
 Use: Medicine (blood anticoagulant).

pheniramine maleate. (prophenpyridamine maleate; 1-phenyl-1-(2-pyridyl)-3-di-methylamino-propane-maleate).

CAS: 132-20-7. $C_{16}H_{20}N_2 \cdot C_4H_4O_4$.

Properties: White, crystalline powder; faint amine-like odor. Mp 104–108°C. Very soluble in alcohol and water; slightly soluble in benzene and ether, 1% solution has pH between 4.5 and 5.5.

Grade: NF.

Use: Medicine (antihistamine).

"Phenmad" [Mallinckrodt]. TM for a 10% phenylmercuric acetate aqueous solution.

Use: Turf fungicide.

Hazard: Highly toxic.

phenobarbital. (phenylbarbital; phenylethylmalonylurea; 5-ethyl-5-phenylbarbituric acid).

CAS: 50-06-6. $C_{12}H_{12}N_2O_3$.

Properties: White, shining, crystalline powder; odorless; stable. Mp 174–178°C. Soluble in alcohol, ether, chloroform, alkali hydroxides, alkali carbonate solutions; sparingly soluble in water.

Derivation: Condensation of phenylethylmalonic acid derivatives and urea.

Grade: USP.

Hazard: May have damaging side effects.

See barbiturate.

Use: Medicine (sedative), laboratory reagent. Also available as the sodium salt, which has good water solubility.

phenocoll hydrochloride.

(aminoacetophenetidide hydrochloride;

glycocoll-*p*-phenetidide hydrochloride).

$C_9H_9O_4N \cdot HCl$.

Properties: Fine, white, crystalline powder. Mp 95°C. Soluble in water and warm alcohol; slightly soluble in chloroform, ether, and benzene.

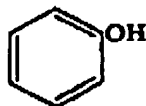
Derivation: By the action of aminoacetic acid upon phenetidide and acidifying.

Use: Medicine (analgesic).

phenol. (1) A class of aromatic organic compounds in which one or more hydroxy groups are attached directly to the benzene ring. Examples are phenol itself (benzophenol), the cresols, xylenols, resorcinol, naphthols. Though technically alcohols, their properties are quite different.

(2) Phenol (carbolic acid; phenylic acid; benzo-phenol; hydroxybenzene).

CAS: 108-95-2. C_6H_5OH .



34th-highest-volume chemical produced in U.S. (1995).

Properties: White, crystalline mass that turns pink or red if not perfectly pure or if under influence of light; absorbs water from the air and liquefies; distinctive odor; sharp burning taste. When in very weak solution it has a sweetish taste. D 1.07, mp 42.5–43°C, bp 182°C, flash p 172.4°F (78°C) (CC), autoign temp 1319°F (715°C). Soluble in alcohol, water, ether, chloroform, glycerol, carbon disulfide, petrolatum, fixed or volatile oils, and alkalis. Combustible.

Derivation: Most of the phenol in the U.S. is made by the oxidation of cumene, yielding acetone as a by-product. The first step in the reaction yields cumene hydroperoxide, which decomposes with dilute sulfuric acid to the primary products, plus acetophenone and phenyl dimethyl carbinol. Several other benzene-based processes have been used in the past; derivation from benzoic acid is also possible.

Method of purification: Rectification.

Grade: Fused, crystals, or liquid, all as technical (82, 90, and 95%, other components mostly cresols), CP, and USP.

Hazard: Toxic by ingestion, inhalation, and skin absorption; strong irritant to tissue. TLV: 5 ppm in air.

Use: Phenolic resins, epoxy resins (bisphenol-A), nylon -6 (caprolactam), 2,4-D, selective solvent for refining lubricating oils, adipic acid, salicylic acid, phenolphthalein, pentachlorophenol, acetophenetidin, picric acid, germicidal paints, pharmaceuticals, laboratory reagent, dyes and indicators, slimicide, biocide, general disinfectant.

Note: High-boiling phenols are mixtures containing predominantly *m*-substituted alkyl phenols. Their boiling points range from 238 to 288°C; they set to a glass at –30°C.

phenolate process. A process for removing hydrogen sulfide from gas by the use of sodium phenolate, which reacts with the hydrogen sulfide to give sodium hydrosulfide and phenol. This can be reversed by steam heat to regenerate the sodium phenolate.

phenol coefficient. In determining the effectiveness of a disinfectant using phenol as a standard of comparison, the phenol coefficient is a value obtained by dividing the highest dilution of the test disinfectant by the highest dilution of phenol that sterilizes a given culture of bacteria under standard conditions of time and temperature.

See disinfectant.

phenoldisulfonic acid. $C_6H_4O_2S_2$.

Properties: Deliquescent crystals. Mp 90°C. Decomposes above 100°C; soluble in water and alcohol.

Use: Manufacture of dy intermediates.

phen l-formaldehyde resin. The first synthetic thermosetting polymer; the reaction product of phenol with aqueous 37–50% formaldehyde at 50–100°C, with basic catalyst, discovered by Baekeland